

SONY®

HD DIGITAL FRAME RECORDER

HDDF-500

SONY 9Pin PROTOCOL
1st Edition

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The REMOTE 1 and REMOTE 2 (9-pin) connectors for remote control are on the HDDF-500 rear panel.

In this protocol, the CONTROLLING DEVICE and CONTROLLED DEVICE are defined as follows.

The CONTROLLING DEVICE means the equipment such as an Editor or VTR control panel which is used to control the CONTROLLED DEVICE. The CONTROLLED DEVICE means the HDDF-500.

The HDDF-500 may be remotely controlled by a CONTROLLING DEVICE connected to either REMOTE 1 or REMOTE 2 connectors or locally. There can be only one source of control at any given time with the selection being made with S10, the CONTROL switch on the HDDF-500 SY-149 board. See HDDF-500 OPERATION MANUAL.

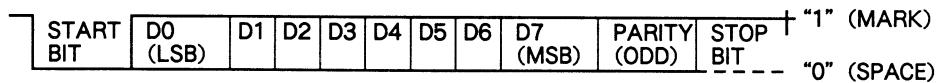
1. COMMUNICATIONS FORMAT

Asynchronous, bit serial signal

- Based on the EIA standard RS-422-A
- Full duplex communications channels
- Data signaling rate: 38.4 Kb/s (Kbits per second)

The composition of bits is defined as follows.

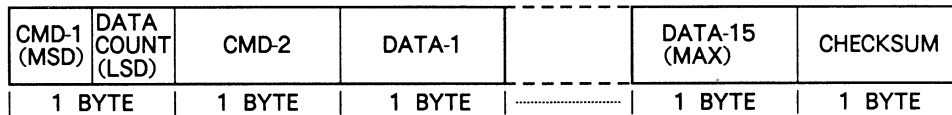
- 1 START Bit + 8 DATA Bits + 1 PARITY Bit + 1 STOP Bit



ODD parity: The sum of logic "1"s in D0 to D7 and PARITY equals an odd number.

2. COMMAND BLOCK FORMAT

Communication between the CONTROLLING DEVICE and the CONTROLLED DEVICE is performed according to the following format.



CMD-1 (Most significant 4 bits of the 1st COMMAND block byte)

Indicates the value according to the function and direction of the command.

CMD-1	FUNCTION	DIRECTION
0	SYSTEM CONTROL	T → R
1	RETURN TO 0, 2, 4, OF CMD-1	T ← R
2	TRANSPORT CONTROL	T → R
4	PRESET & SELECT CONTROL	T → R
6	SENSE REQUEST	T → R
7	SENSE RETURN	T ← R

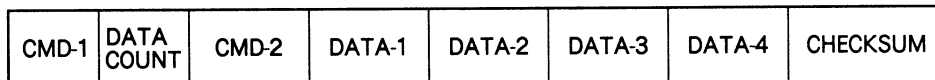
T=CONTROLLING DEVICE
R=CONTROLLED DEVICE

DATA COUNT (Least significant 4 bits of the 1st COMMAND block byte)

Indicates the number of DATA bytes (15 bytes max.) that are inserted between CMD-2 and CHECKSUM.

Ex. DATA COUNT=4

This means that the COMMAND block contains 4 DATA bytes and will be as follows.



CMD-2 (1 BYTE)

Designates the particular command.

Ex. CMD-1="0", CMD-2="0C"

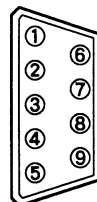
This means a LOCAL DISABLE command.

Refer to Section 5., COMMAND TABLE for details of CMD-2.

4. CONNECTIONS

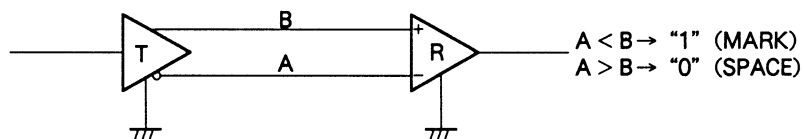
The pin assignments of the connectors between the CONTROLLING DEVICE and the CONTROLLED DEVICE are as follow.

PIN	CONTROLLING DEVICE	CONTROLLED DEVICE
1	Frame Ground	Frame Ground
2	Receive A	Transmit A
3	Transmit B	Receive B
4	Transmit Common	Receive Common
5	Spare	Spare
6	Receive Common	Transmit Common
7	Receive B	Transmit B
8	Transmit A	Receive A
9	Frame Ground	Frame Ground



(OUTSIDE VIEW)

A and B are defined as follows.



5. COMMAND TABLE

The command marked with * is output from the CONTROLLED DEVICE. The HDDF-500 receives these commands but does not transmit them.

COMMAND FROM CONTROLLING DEVICE				RETURN FROM HDDF-500			
CMD-1	DATA COUNT	CMD-2	NAME	CMD-1	DATA COUNT	CMD-2	NAME
0	0	0C	* LOCAL DISABLE	1	0	01	ACK
0	0	11	* DEVICE TYPE REQUEST	1	2	11	DEVICE TYPE
0	0	1D	* LOCAL ENABLE	1	0	01	ACK
2	0	00	STOP	1	0	01	ACK
2	0	01	PLAY	1	0	01	ACK
2	0	02	REC	1	0	01	ACK
2	0	04	STANDBY OFF	1	0	01	ACK
2	0	05	STANDBY ON	1	0	01	ACK
2	0	0D	* DMC START	1	0	01	ACK
2	0	10	FAST FWD	1	0	01	ACK
2	X	11	JOG FWD	1	0	01	ACK
2	X	12	VAR FWD	1	0	01	ACK
2	X	13	SHUTTLE FWD	1	0	01	ACK
2	0	14	STEP FWD	1	0	01	ACK
2	0	20	REWIND	1	0	01	ACK
2	X	21	JOG REV	1	0	01	ACK
2	X	22	VAR REV	1	0	01	ACK
2	X	23	SHUTTLE REV	1	0	01	ACK
2	0	24	STEP REV	1	0	01	ACK
2	0	30	PREROLL	1	0	01	ACK
2	4	31	CUE UP WITH DATA	1	0	01	ACK
2	5	31	SEARCH TO CUE	1	0	01	ACK
2	1	38	PROG. SPEED PLAY +	1	0	01	ACK
2	1	39	PROG. SPEED PLAY -	1	0	01	ACK
2	0	3C	DMC PREROLL	1	0	01	ACK
2	0	40	PREVIEW	1	0	01	ACK
2	0	41	REVIEW	1	0	01	ACK
2	0	42	AUTO EDIT	1	0	01	ACK
2	0	43	* OUT POINT PREVIEW	1	0	01	ACK
2	0	4B	* DMC RUN	1	0	01	ACK
2	0	4C	* DMC PREVIEW	1	0	01	ACK
2	0	54	* ANTI-CLOG TIMER DIS	1	0	01	ACK
2	0	55	* ANTI-CLOG TIMER EN	1	0	01	ACK
2	1	5C	* DMC SET FWD	1	0	01	ACK
2	1	5D	* DMC SET REV	1	0	01	ACK

COMMAND FROM CONTROLLING DEVICE				RETURN FROM HDDF-500			
CMD-1	DATA COUNT	CMD-2	NAME	CMD-1	DATA COUNT	CMD-2	NAME
2	0	60	* FULL EE OFF	1	0	01	ACK
2	0	61	* FULL EE ON	1	0	01	ACK
2	0	63	* SELECT EE ON	1	0	01	ACK
2	0	64	EDIT OFF	1	0	01	ACK
2	0	65	EDIT ON	1	0	01	ACK
2	0	66	Δt PREVIEW OFF	1	0	01	ACK
2	0	67	Δt PREVIEW ON	1	0	01	ACK
2	0	6E	STILL DIRECT OFF	1	0	01	ACK
2	0	6F	STILL DIRECT ON	1	0	01	ACK
4	4	00	TIMER-1 PRESET	1	0	01	ACK
4	4	04	TIME CODE PRESET	1	0	01	ACK
4	4	05	USER BIT PRESET	1	0	01	ACK
4	0	08	TIMER-1 RESET	1	0	01	ACK
4	0	0F	TCG RUN	1	0	01	ACK
4	0	10	IN ENTRY	1	0	01	ACK
4	0	11	OUT ENTRY	1	0	01	ACK
4	0	12	A IN ENTRY	1	0	12	NAK
4	0	13	A OUT ENTRY	1	0	12	NAK
4	4	14	IN DATA PRESET	1	0	01	ACK
4	4	15	OUT DATA PRESET	1	0	01	ACK
4	4	16	A IN DATA PRESET	1	0	12	NAK
4	4	17	A OUT DATA PRESET	1	0	12	NAK
4	0	18	IN + SHIFT	1	0	01	ACK
4	0	19	IN - SHIFT	1	0	01	ACK
4	0	1A	OUT + SHIFT	1	0	01	ACK
4	0	1B	OUT - SHIFT	1	0	01	ACK
4	0	1C	* A IN + SHIFT	1	0	12	NAK
4	0	1D	* A IN - SHIFT	1	0	12	NAK
4	0	1E	* A OUT + SHIFT	1	0	12	NAK
4	0	1F	* A OUT - SHIFT	1	0	12	NAK
4	0	20	IN FLAG RESET	1	0	01	ACK
4	0	21	OUT FLAG RESET	1	0	01	ACK
4	0	22	A IN FLAG RESET	1	0	12	NAK
4	0	23	A OUT FLAG RESET	1	0	12	NAK
4	0	24	IN RECALL	1	0	01	ACK
4	0	25	OUT RECALL	1	0	01	ACK
4	0	26	A IN RECALL	1	0	12	NAK
4	0	27	A OUT RECALL	1	0	12	NAK
4	0	2D	LOST LOCK RESET	1	0	01	ACK

COMMAND FROM CONTROLLING DEVICE				RETURN FROM HDDF-500			
CMD-1	DATA COUNT	CMD-2	NAME	CMD-1	DATA COUNT	CMD-2	NAME
4	?	30	EDIT PRESET	1	0	01	ACK
4	4	31	PREROLL TIME PRESET	1	0	01	ACK
4	1	32	TAPE/AUTO SELECT	1	0	01	ACK
4	1	33	SERVO REF SELECT	1	0	01	ACK
4	1	34	HEAD SELECT	1	0	01	ACK
4	1	35	* COLOR FRAME SELECT	1	0	01	ACK
4	1	36	TIMER MODE SELECT	1	0	01	ACK
4	1	37	INPUT CHECK	1	0	01	ACK
4	X	38	* PB FIELD/FRAME SEL	1	0	01	ACK
4	1	39	* REC FIELD/FRAME SEL	1	0	01	ACK
4	1	3A	* EDIT FIELD SEL	1	0	01	ACK
4	1	3F	* Δt REC PRESET	1	0	01	ACK
4	0	40	AUTO MODE OFF	1	0	01	ACK
4	0	41	AUTO MODE ON	1	0	01	ACK
4	0	42	SPOT ERASE OFF	1	0	01	ACK
4	0	43	SPOT ERASE ON	1	0	01	ACK
4	0	44	AUDIO SPLIT OFF	1	0	01	ACK
4	0	45	AUDIO SPLIT ON	1	0	01	ACK
4	0	46	VAR MEM OFF	1	0	01	ACK
4	0	47	VAR MEM ON	1	0	01	ACK
4	2	50	DA INPUT SELECT	1	0	01	ACK
4	X	80	* CHAR DISPLAY 1	1	0	01	ACK
4	X	81	* CHAR DISPLAY 2	1	0	01	ACK
4	X	82	* CHAR DISPLAY 3	1	0	01	ACK
4	X	83	* CHAR DISPLAY 4	1	0	01	ACK
4	X	84	* CHAR DISPLAY 5	1	0	01	ACK
4	X	85	* CHAR DISPLAY 6	1	0	01	ACK
4	X	86	* CHAR DISPLAY 7	1	0	01	ACK
4	X	87	* CHAR DISPLAY 8	1	0	01	ACK

COMMAND FROM CONTROLLING DEVICE				RETURN FROM HDDF-500			
CMD-1	DATA COUNT	CMD-2	NAME	CMD-1	DATA COUNT	CMD-2	NAME
6	1	0A	TC GEN DATA SENSE	7	4	08	GEN TIME DATA
				7	4	00	TIMER-1 DATA
				7	4	01	TIMER-2 DATA
6	1	0C	CURRENT TIME SENSE	7	4	06	VITC TIME DATA
				7	4	05	UB (LTC) DATA
				7	4	07	UB (VITC) DATA
6	0	10	IN DATA SENSE	7	4	10	IN DATA
6	0	11	OUT DATA SENSE	7	4	11	OUT DATA
6	0	12	A IN DATA SENSE	1	1	12	NAK
6	0	13	A OUT DATA SENSE	1	1	12	NAK
6	1	20	STATUS SENSE	7	X	20	STATUS DATA
6	1	30	EDIT PRESET SENSE	1	1	12	NAK
6	0	36	TIMER MODE SENSE	7	1	36	TIMER MODE STATUS
6	0	50	DA INPUT SENSE	1	1	12	NAK
6	0	51	DA SYS EMPHASIS SENSE	1	1	12	NAK
6	0	52	DA INP EMPHASIS SENSE	1	1	12	NAK
6	0	53	DA PB EMPHASIS SENSE	1	1	12	NAK
6	0	58	DA SAMPLE FREQ SENSE	1	1	12	NAK
7	4	08	GEN TIME DATA	1	1	12	NAK
7	4	09	GEN UB DATA	1	1	12	NAK
7	4	14	CORRECTED LTC TIME DATA	1	1	12	NAK
7	4	15	HOLD UB (LTC) DATA	1	1	12	NAK
7	4	16	CORRECTED VITC TIME DATA	1	1	12	NAK
7	4	17	HOLD UB (VITC) DATA	1	1	12	NAK
7	1	50	DA INPUT STATUS	1	1	12	NAK
7	1	51	DA SYS EMPHASIS STATUS	1	1	12	NAK
7	1	52	DA INP EMPHASIS STATUS	1	1	12	NAK
7	1	53	DA PB EMPHASIS DATA	1	1	12	NAK
7	1	58	DA SAMPL FREQ DATA	1	1	12	NAK
				1	1	12	NAK

NOTE: UNLESS OTHERWISE NOTED, THE FOLLOWING WILL DETAIL THE HDDF-500 RESPONSE.

00. 0C: *LOCAL DISABLE

Sets LOCAL, BIT 0 of DATA No.0 in 7X. 20: STATUS DATA.

00. 11: *DEVICE TYPE REQUEST

12. 11: DEVICE TYPE

The "00. 11: DEVICE TYPE REQUEST" is sent by the CONTROLLING DEVICE to identify the Model of the CONTROLLED DEVICE. The HDDF-500 identifies itself as a BVH-2500 by returning a DATA-1 of 00 and a DATA-2 of 20.

00. 1D: *LOCAL ENABLE

Sets LOCAL, BIT 0 of DATA No.0 in 7X. 20: STATUS DATA, does not inhibit commands.

10. 01: ACK

This is the acknowledgment response of the HDDF-500.

11. 12: NAK

This is the no acknowledgment response of the HDDF-500. DATA-1 of the response will have the applicable bit set to indicate the reason for the NAK.

DATA-1							
BIT-7	BIT-6	BIT-5	BIT-4	BIT-3	BIT-2	BIT-1	BIT-0
TIME OUT	FRAMING ERROR	OVERRUN ERROR	PARITY ERROR		CHECKSUM ERROR		UNDEFINED COMMAND

20. 00: STOP

2X. 01: PLAY

Normal play. Ignores the command DATA.

20. 02: REC

Starts record from current time code. If single frame mode is set, stops after one frame.

20. 04: STANDBY OFF

If in STOP mode, resets STANDBY, BIT 7 of DATA No.1 in 7X. 20: STATUS DATA and enables video and switches to EE mode or black, as appropriate.

20. 05: STANDBY ON

Sets STANDBY, BIT 7 of DATA No.1 in 7X. 20: STATUS DATA and enables video output from memory.

20. 0D: *DMC START

ACKnowledges but no action.

20. 10: FAST FWD

Full speed forward (approx. $\times 50$).

2X. 11: JOG FWD

2X. 12: VAR FWD

2X. 13: SHUTTLE FWD

20. 14: STEP FWD

Step FWD one frame.

20. 24: STEP REV

Step REV one frame.

20. 20: REWIND

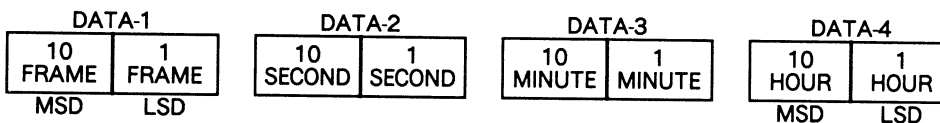
Full speed reverse (approx. $\times 50$).

20. 30: PREROLL

Goes to Still at IN point minus Preroll Preset. If IN point is illegal, goes to Still at minimum time code (00: 40: 00: 00).

24. 31: CUE UP WITH DATA

Goes to the specified point (if legal). Uses NTSC mode field data. The CUE UP DATA is formatted as follows.



25. 31:SEARCH TO CUE

ACK/NAK HDDF-500 response.

21. 38: PROG. SPEED PLAY +

21. 39: PROG. SPEED PLAY-

Variable speed play.

20. 3C: DMC PREROLL

ACKnowledges but no action.

20. 40: PREVIEW

Requires IN and OUT points.

20. 41: REVIEW

Requires IN point.

20. 42: AUTO EDIT

Requires IN and OUT points.

The HDDF-500 ACKnowledges the following commands without any action.

20. 43: *OUT POINT PREVIEW

20. 4B: *DMC RUN

20. 4C: *DMC PREVIEW

20. 54: *ANTI-CLOG TIMER DISABLE

20. 55: *ANTI-CLOG TIMER ENABLE

20. 5C: *DMC SET FWD

20. 5D: *DMC SET REV

20. 60: *FULL EE OFF

Resets EE mode.

20. 61: *FULL EE ON

Sets EE mode.

20. 63: *SELECT EE ON

Sets EE mode.

20. 64: EDIT OFF

Delayed by ten (10) fields, then executed.

20. 65: EDIT ON

Delayed by ten (10) fields, then executed.

20. 66: Δ t PREVIEW OFF

Disable DT Preview.

20. 67: Δ t PREVIEW ON

Enable DT Preview (10 frames tape, 20 frames EE).

20. 6E: STILL DIRECT OFF

ACKnowledges but no action.

20. 6F: STILL DIRECT ON

ACKnowledges but no action.

44. 00: TIMER-1 PRESET

Set Timer-1 with included data.

44. 04: TIME CODE PRESET

ACKnowledges but no action.

44. 05: USER BIT PRESET
ACKnowledges but no action.

40. 08: TIMER-1 RESET
Set Timer-1 to 00:00:00:00.

40. 0F: TCG RUN
ACKnowledges but no action.

40. 10: IN ENTRY
Current TC → IN point. In loop mode VITC is always used.

40. 11: OUT ENTRY
Current TC → OUT point. In loop mode VITC is always used.

40. 12: A IN ENTRY
Command not recognized by the HDDF-500.

40. 13: A OUT ENTRY
Command not recognized by the HDDF-500.

44. 14: IN DATA PRESET
Included data → IN point.

44. 15: OUT DATA PRESET
Included data → OUT point.

44. 16: A IN DATA PRESET
Command not recognized by the HDDF-500.

44. 17: A OUT DATA PRESET
Command not recognized by the HDDF-500.

40. 18: IN+SHIFT
Increment IN point.

40. 19: IN-SHIFT
Decrement IN point.

40. 1A: OUT+SHIFT
Increment OUT point.

40. 1B: OUT-SHIFT
Decrement OUT point.

The following commands are not recognized by the HDDF-500.

- 40. 1C: *A IN+SHIFT**
- 40. 1D: *A IN-SHIFT**
- 40. 1E: *A OUT+SHIFT**
- 40. 1F: *A OUT-SHIFT**

40. 20: IN FLAG RESET
Resets IN, BIT 0 of DATA No.3 in 7X. 20: STATUS DATA.

40. 21: OUT FLAG RESET
Resets OUT, BIT 1 of DATA No.3 in 7X. 20: STATUS DATA.

40. 22: A IN FLAG RESET
Command not recognized by the HDDF-500.

40. 23: A OUT FLAG RESET
Command not recognized by the HDDF-500.

40. 24: IN RECALL
Sets IN, BIT 0 of DATA No.3 in 7X. 20: STATUS DATA.

40. 25: OUT RECALL
Sets OUT, BIT 1 of DATA No.3 in 7X. 20: STATUS DATA.

40. 26: A IN RECALL
Command not recognized by the HDDF-500.

40. 27: A OUT RECALL
Command not recognized by the HDDF-500.

40. 2D: LOST LOCK RESET
Reset LOST LOCK, BIT 6 of DATA No.8 in 7X. 20: STATUS DATA.

41. 30: EDIT PRESET
Sets edit mode. Each bit in DATA-1 is defined as follows.

DATA-1							
BIT-7	BIT-6	BIT-5	BIT-4	BIT-3	BIT-2	BIT-1	BIT-0
	INSERT	ASSEMBLE	VIDEO	SYNC/A4	A3	A2	A1

41. 31: PREROLL TIME PRESET
Stores preroll time (in seconds).

41. 32: TAPE/AUTO SELECT

DATA-1 is used for selection.

DATA-1

00: AUTO (NON EE/EE)

01: NON EE

FF: Determined by the setting of S9, the EE switch on SY-149 board.

41. 33: SERVO REF SELECT

DATA-1 is used for selection.

DATA-1

00: AUTO

01: REF VIDEO

02: G VIDEO

FF: Determined by the setting of S7, the SYNC SEL switch on SY-149 board.

41. 34: HEAD SELECT

ACKnowledges but no action.

41. 35: *COLOR FRAME SELECT

ACKnowledges but no action.

41. 36: TIMER MODE SELECT

This command is used for selecting the TIMER system used in the AUTO mode which displays the IN ENTRY, OUT ENTRY, IN PRESET, OUT PRESET, PREROLL and CUE UP WITH DATA, etc. as determined by the contents of DATA-1.

DATA-1

00: 2 Field

02: 4 Field

03: 8 Field (PAL, PAL-M)

FF:

41. 37: INPUT CHECK

The HDDF-500 ACKnowledges the following commands without any action.

4X. 38: *PB FIELD/FRAME SEL

41. 39: *REC FIELD/FRAME SEL

41. 3A: *EDIT FIELD SEL

41. 3F: Δ t REC PRESET

Set DT mode (Single frame mode).

40. 40: AUTO MODE OFF

Resets AUTO mode.

40. 41: AUTO MODE ON

Sets AUTO mode. Enables IN/OUT looping in LOOP mode.

The HDDF-500 ACKnowledges the following commands without any action.

- 40. 42: SPOT ERASE OFF
- 40. 43: SPOT ERASE ON
- 40. 44: AUDIO SPLIT OFF
- 40. 45: AUDIO SPLIT ON
- 40. 46: *VAR MEM OFF
- 40. 47: *VAR MEM ON
- 42. 50: DA INPUT SELECT
- 4X. 80: *CHAR DISPLAY 1
- 4X. 81: *CHAR DISPLAY 2
- 4X. 82: *CHAR DISPLAY 3
- 4X. 83: *CHAR DISPLAY 4
- 4X. 84: *CHAR DISPLAY 5
- 4X. 85: *CHAR DISPLAY 6
- 4X. 86: *CHAR DISPLAY 7
- 4X. 87: *CHAR DISPLAY 8

61. 0A: TC GEN DATA SENSE

DATA-1 is ignored. Returns 00: 00: 00: 00.

61. 0C: CURRENT TIME SENSE

Time code is returned if VITC TIME, TIMER-1, or TIMER-2 DATA is requested. User Bit if requested is returned as zero.

60. 10: IN DATA SENSE

60. 11: OUT DATA SENSE

These commands are used to request the IN/OUT ENTRY DATA.

60. 12: A IN DATA SENSE

Command not recognized by the HDDF-500.

60. 13: A OUT DATA SENSE

Command not recognized by the HDDF-500.

61. 20: STATUS SENSE

This command is used to request the status of the CONTROLLED DEVICE. The response of the CONTROLLED DEVICE will be in accordance with the contents of DATA-1.

The the most significant 4 bits of DATA-1 indicates the initial DATA No.of 7X. 20: STATUS DATA which is to be returned. The least significant 4 bits of DATA-1 indicate the number of consecutive data bytes to be returned starting with the requested initial DATA NO.

Ex. When DATA-1 of 61. 20: STATUS SENSE command is 2A.

The CONTROLLED DEVICE will send back ten bytes from DATA No.2, i.e., DATA No.2 to DATA No.B of 7X. 20: STATUS DATA.

DATA-1 such as 77, 68, 5B etc. whose sums of the upper and lower nibbles exceed D should not be used.

61. 30: EDIT PRESET SENSE (Only for BVH-2800/2830)

Command is not recognized.

60. 36: TIMER MODE SENSE

This command is used to request the setting of the TIME CODE/ TIMER-1/TIMER-2 select switch on the front panel of the CONTROLLED DEVICE.

The following commands are not recognized by the HDDF-500.

- 60. 50: DA INPUT SENSE (Only for BVH-2800/2830)**
- 60. 51: DA SYS EMPHASIS SENSE (Only for BVH-2800/2830)**
- 60. 52: DA INP EMPHASIS SENSE (Only for BVH-2800/2830)**
- 60. 53: DA PB EMPHASIS SENSE (Only for BVH-2800/2830)**
- 60. 58: DA SAMPLE FREQ SENSE (Only for BVH-2800/2830)**

The following is the response of the HDDF-500 to the 61. 0C CURRENT TIME SENSE command. The content of DATA-1 determines which of the responses is returned. Time code is returned as time data and zero is returned as User Bit.

DATA-1	HDDF-500 Response
02	74. 06: VITC TIME DATA
04	74. 00: TIMER-1 DATA
08	74. 01: TIMER-2 DATA
10	74. 05: UB (LTC) DATA
20	74. 07: UB (VITC) DATA

The following commands are not supported by the HDDF-500.

- 74. 08: GEN TIME DATA**
- 74. 09: GEN UB DATA**
- 74. 14: CORRECTED LTC TIME DATA**
- 74. 15: HOLD UB (LTC) DATA**
- 74. 16: CORRECTED VITC TIME DATA**
- 74. 17: HOLD HUB (VITC) DATA**
- 71. 50: DA INPUT STATUS**
- 71. 51: DA SYS EMPHASIS STATUS**
- 71. 52: DA INP EMPHASIS STATUS**
- 71. 53: DA PB EMPHASIS STATUS**
- 71. 58: DA SAMPLE FREQ DATA**

7X. 20: STATUS DATA

When the CONTROLLED DEVICE receives the 61. 20: STATUS SENSE command from the CONTROLLING DEVICE, the following data will be sent back as a response according to the request.

DATA No.	BIT-7 MSB	BIT-6	BIT-5	BIT-4	BIT-3	BIT-2	BIT-1	BIT-0 LSB
0			TAPE UNTHREAD	SERVO REF MISSING	TAPE TROUBLE	HARD ERROR		LOCAL
1	STANDBY		STOP		REW	FF	REC	PLAY
2	SERVO LOCK	TSO MODE	SHUTTLE	JOG	VAR	TAPE DIR	STILL	CUE UP
3	AUTO MODE				A OUT	A IN	OUT	IN
4	SELECT EE ON	FULL EE ON	SEARCH TO CUE	EDIT	REVIEW	AUTO EDIT	PREVIEW	PREROLL
5		INSERT	ASSEMBLE	VIDEO	SYNC/A4	A3	A2	A1
6		LAMP STILL	LAMP FWD	LAMP REW	SEARCH LED 8 4 2 1			
7	VAR MEM MODE	VAR MEM ACTIVE	AUDIO SPLIT		DISPLAY HOLD	SPOT ERASE		IN-OUT STATUS
8	BUZZER ALARM	LOST LOCK	NEAR EOT	EOT	CF LOCK	SERVO ALARM	SYSTEM ALARM	REC INHIBIT
9	FUNCTION ABORT			VIDEO LACK	SYNC LACK			
A	REV STEP	FWD STEP	Δt REC EXECUTE	Δt PREVIEW	Δt READY	SLOW REC	STEP REC	STILL REC
B	Δt REC FLD/FR	Δt REC STEP FLD/FR	DT FLD/FR	PB STEP FLD/FR	CF DETECT	COLOR FIELD ADDRESS4	COLOR FIELD ADDRESS2	COLOR FIELD ADDRESS1
C							DA2	DA1

DATA No.0

DATA No.0/BIT-5: TAPE UNTHREAD

Bit-5 is set to 0.

DATA No.0/BIT-4: SERVO REF MISSING

Bit-4 is set to 0.

DATA No.0/BIT-3: TAPE TROUBLE

Bit-3 is set to 0.

DATA No.0/BIT-2: HARD ERROR

Bit-2 is set to 0.

DATA No.0/BIT-0: LOCAL

Bit-0 is set to 1 when S10, CONTROL switch on the SY-149 board of the HDDF-500 is set to LOCAL.

DATA No.1

DATA No.1/BIT-7: STANDBY

Bit-7 is set to 1.

DATA No.1/BIT-5: STOP

Bit-5 is set to 1 when the CONTROLLED DEVICE receives the 20. 00: STOP command and goes to the STOP mode.

DATA No.1/BIT-3: REW

Bit-3 is set to 1 when the CONTROLLED DEVICE receives the 20. 20: REWIND command and goes into the FULL REWIND mode.

DATA No.1/BIT-2: FF

Bit-2 is set to 1 when the CONTROLLED DEVICE receives the 20. 10: FAST FWD command and goes to the FULL FORWARD mode. DATA No.2/BIT-5: SHUTTLE is also set to 1.

DATA No.1/BIT-1: REC

Bit-1 is set to 1 when the CONTROLLED DEVICE receives the 20. 02: REC command and goes into the REC mode. Bit-1 will also be set to 1 when DATA No.4/BIT-4: EDIT is to 1.

DATA No.1/BIT-0: PLAY

Bit-0 is set to 1 when the CONTROLLED DEVICE receives the 20. 01: PLAY, 20. 02: REC, or 20. 65: EDIT ON command and goes into PLAY, REC, or EDIT mode.

DATA No.2

DATA No.2/BIT-7: SERVO LOCK

Bit-7 is set to 1.

DATA No.2/BIT-6: TSO MODE

Bit-6 is set to 0.

DATA No.2/BIT-5: SHUTTLE

Bit-5 is set to 1 when the CONTROLLED DEVICE receives the 20. 10: FAST FWD, 2X. 13: SHUTTLE FWD, 20. 20: REWIND or 2X. 23: SHUTTLE REV command and goes into the SHUTTLE mode.

DATA No.2/BIT-4: JOG

Bit-4 is set to 1 when the CONTROLLED DEVICE receives the 2X. 11: JOG FWD or 2X. 21: JOG REV command and goes into the JOG mode. Refer to 20. 14 STEP FWD command.

DATA No.2/BIT-3: VAR

Bit-3 is set to 1 when the CONTROLLED DEVICE is in one of the following mode.

- VAR SLOW mode
- VAR MEMORY PLAY mode

DATA No.2/BIT-2: TAPE DIRECTION

Bit-2 shows the direction of the Frame Counter of the HDDF-500. In STILL or STOP, the last direction is maintained.

0=FWD, count up.

1=REV, count down.

DATA No.2/BIT-1: STILL

Bit-1 is set to 1 when CONTROLLED DEVICE goes to STILL during the STOP or SEARCH mode.

DATA No.2/BIT-0: CUE UP

Bit-0 is set to 1 when the CONTROLLED DEVICE receives 20. 30: PREROLL command and then cue-up operation is completed. Bit-0 is sets to 0 when the HDDF-500 Frame Counter begins counting.

DATA No.3

DATA No.3/BIT-7: AUTO MODE

Bit-7 is set to 1 when the CONTROLLED DEVICE receives the 40. 41: AUTO MODE ON command and goes into the AUTO EDIT mode.

DATA No.3/BIT-3: A OUT

Bit-3 is set to 0.

DATA No.3/BIT-2: A IN

Bit-2 is set to 0.

DATA No.3/BIT-1: OUT

DATA No.3/BIT-0: IN

When the CONTROLLED DEVICE receives the 40. 41: AUTO MODE ON command, goes into the AUTO EDIT mode and then receives one of the following commands, the corresponding BIT-(0 to 1) is set to 1. Also the TIMER or TIME CODE data is stored. These commands are.

- 40. 10: IN ENTRY
- 40. 11: OUT ENTRY
- 40. 12: A IN ENTRY
- 40. 13: A OUT ENTRY
- 40. 24: IN RECALL
- 40. 25: OUT RECALL
- 40. 26: A IN RECALL
- 40. 27: A OUT RECALL

DATA No.4

DATA No.4/BIT-7: SELECT EE ON

Bit-7 is set to 1 when the CONTROLLED DEVICE receives the 41. 30: EDIT PRESET command and the specified channels go into the E-E mode.

DATA No.4/BIT-6: FULL EE ON

Bit-6 is set to 1 when the CONTROLLED DEVICE receives the 20. 61: FULL EE ON command and all channels go into E-E mode.

When the CONTROLLED DEVICE receives the 20. 02: REC command, and all channels go into E-E mode, bit-6 will be also set to 1 irrespective of the 20. 61: FULL EE ON command.

DATA No.4/BIT-5: SEARCH TO CUE

Bit-5 is set to 0.

DATA No.4/BIT-4: EDIT

Bit-4 is set to 1 when the CONTROLLED DEVICE is in the AUTO EDIT mode and DATA No.1/BIT-1: REC is 1.

DATA No.4/BIT-3: REVIEW

Bit-3 is set to 1 when the CONTROLLED DEVICE is in the REVIEW mode.

DATA No.4/BIT-2: AUTO EDIT

Bit-2 is set to 1 when the CONTROLLED DEVICE is in the AUTO EDIT mode.

DATA No.4/BIT-1: PREVIEW

Bit-1 is set to 1 when the CONTROLLED DEVICE is in the PREVIEW mode.

DATA No.4/BIT-0: PREROLL

Bit-0 is set to 0.

DATA No.5

DATA No.5/BIT-6: INSERT

DATA No.5/BIT-5: ASSEMBLE

DATA No.5/BIT-4: VIDEO

When the CONTROLLED DEVICE receives the 4X. 30: EDIT PRESET command, the BIT-(4 to 6) corresponding to DATA-1 of the command is set to 1.

DATA No.5/BIT-3: SYNC/A4

Bit-3 is set to 0.

DATA No.5/BIT-2: A3

Bit-2 is set to 0.

DATA No.5/BIT-1: A2

Bit-1 is set to 0.

DATA No.5/BIT-0: A1

Bit-0 is set to 0.

DATA No.6

DATA No.6/BIT-6: LAMP STILL

DATA No.6/BIT-5: LAMP FWD

DATA No.6/BIT-4: LAMP REV

When the CONTROLLED DEVICE receives the 25. 31: SEARCH TO CUE command, the corresponding BITs-(4 to 6) is set according to the DATA-(1 to 5) of the command.

The following bits are set to 0.

DATA No.6/BIT-3: SEARCH LED 8

DATA No.6/BIT-2: SEARCH LED 4

DATA No.6/BIT-1: SEARCH LED 2

DATA No.6/BIT-0: SEARCH LED 1

DATA No.7

Bits 7, 6, 5, 3, 2 and 0 of DATA NO 7 are set to 0.

DATA No.8

Bits 7, 5, 3, 2, 1 and 0 are set to 0.

DATA No.8/BIT-6: LOST LOCK

Bit-6 is set if the Sync lock loop is unlocked.

DATA No.8/BIT-4: EOT

Bit-4 is set to 1 when all the video memory is used.

DATA No.9

DATA No.9/BIT-7: FUNCTION ABORT

Bit-7 will be set to 1 when the CONTROLLED DEVICE is in the AUTO EDIT or PREVIEW mode, if the synchronization is not finished or the servo lock is lost at the point of 6 frames before the VIDEO IN point. Bit-7 will be also set to 1 when recording is not performed in the Δt STILL/STEP/SLOW REC mode.

DATA No.9/BIT-4: VIDEO LACK

Bit-1 is set to 0.

DATA No.9/BIT-3: SYNC LACK

Bit-1 is set to 0.

DATA No.A

DATA No.A/BIT-7: REV STEP

DATA No.A/BIT-6: FWD STEP

Refer to 20. 14: STEP FWD command.

DATA No.A/BIT-5: Δt REC EXECUTE

Bit-5 is set to 1 when the CONTROLLED DEVICE is in the Δt SLOW/STEP/STILL REC or the SET FWD/REV mode. Refer to 20. 14: STEP FWD command.

DATA No.A/BIT-4: Δt PREVIEW

Bit-4 will be set to 1 when the CONTROLLED DEVICE is in the Δt PREVIEW mode. Refer to the 20. 67: Δt PREVIEW ON command.

DATA No.A/BIT-3: Δt REC ONLY

Bit-3 will be set to 1 when the Δt REC mode of the CONTROLLED DEVICE is preset. Refer to the 41. 3F: Δt REC PRESET command.

DATA No.A/BIT-2: SLOW REC

DATA No.A/BIT-1: STEP REC

DATA No.A/BIT-0: STILL REC

Bit-2, 1, or 0 will be set to 1 when the SLOW REC, STEP REC, or STILL REC is preset. Refer to the 41. 3F: Δ t REC PRESET command.

DATA No.B

DATA No.B/BIT-7: Δ t REC FIELD/FRAME

DATA No.B/BIT-6: Δ t STEP FIELD/FRAME

Bit-7 will be set to 1 when the unit of recording in the Δ t REC mode is frame and bit-6 will be set to 1 when the unit of the STEP in the Δ t REC is frame, and bit-7 and/or bit-6 will be set to 0 when the machine is field. Refer to 4X. 39: REC FIELD/FRAME SEL command.

DATA No.B/BIT-5: DT FIELD/FRAME

Bit-5 is set to 1 when in frame and 0 when in field.

DATA No.B/BIT-4: PB STEP FIELD/FRAME

Bit-4 will be set to 1 when the unit of the STEP in the playback mode is frame and it will be set to 0 when the unit is field.

The following bits are set to 0.

DATA No.B/BIT-3: CF DETECT

DATA No.B/BIT-2: COLOR FIELD ADDRESS 4

DATA No.B/BIT-1: COLOR FIELD ADDRESS 2

DATA No.B/BIT-0: COLOR FIELD ADDRESS 1

DATA No.C

DATA No.C/BIT-1: DA2

DATA No.C/BIT-0: DA1

When the CONTROLLED DEVICE receives the 42. 30: EDIT PRESET command, Bits-1, 0 are set to 1 according to the contents of DATA-1 and DATA-2 of the command.





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